

CLAIMS

1. An information providing method in which a movable body and a fixed station communicate with each other and the fixed station provides various types of information to the movable body, the method being characterized in that

the movable body previously registers, in the fixed station, movable-body identification information for identifying the movable body, communication unit identification information for identifying a communication unit which is assembled in the movable body and used for communication with the fixed station, and user identification information for identifying a user who owns the movable body in a mutually related manner; and

when request information representing request for information provision and at least one of movable-body identification information, communication unit identification information, and user identification information are sent from the movable body,

the fixed station authenticates the movable body by comparing at least one of the movable-body identification information, the communication unit identification information, and the user identification information sent from the movable body with the movable-body identification information, the communication unit identification information, and the user identification information registered in a mutually related manner, and

provides a predetermined piece of information to the movable body on the basis of the request information when the movable body is specified by the authentication.

2. An information providing method according to claim 1, wherein

a first information registration apparatus capable of communicating with the fixed station is disposed at a predetermined first location, and a second information registration apparatus capable of communicating with the fixed station is disposed at a predetermined second location; and

as the movable-body identification information, the communication unit identification information, and the user identification information to be registered in the fixed station in a mutually related manner,

the first information registration apparatus registers movable-body identification information issued at the time of manufacture of the movable body and communication unit identification information issued at the time of manufacture of the communication unit in the fixed station in a mutually related manner, and

the second information registration apparatus registers user identification information in the fixed station while relating the user identification information with at least one of the movable-body identification information and the communication unit identification information registered in the fixed station in a mutually related manner.

3. An information providing method according to claim 1 or 2, wherein

when request information representing request for information provision, present location information representing a present location of the movable body, and at least one of movable-body identification information, communication unit identification information, and user identification information are sent from the movable body,

the fixed station authenticates the movable body by comparing at

least one of the movable-body identification information, the communication unit identification information, and the user identification information sent from the movable body with the movable-body identification information, the communication unit identification information, and the user identification information registered in a mutually related manner,

determines whether the movable body is present at the predetermined location on the basis of the present location information sent from the movable body, and

provides a predetermined piece of information to the movable body on the basis of the request information when the movable body is specified by the authentication and the movable body is determined to be present at the predetermined location.

4. An information providing method according to any one of claims 1 to 3, wherein the communication unit is integrally assembled in the movable body.

5. An information providing method according to any one of claims 1 to 4, wherein at least one the movable-body identification information and the communication unit identification information is represented by a barcode.

6. An information providing method according to any one of claims 1 to 5, wherein the movable body is a vehicle.

7. An information providing method according to claim 6, wherein the predetermined first location is a plant at which the vehicle is manufactured,

and the predetermined second location is a sales shop at which the vehicle is sold.

8. An information providing method according to claim 6 or 7, wherein the movable-body identification information is chassis number information representing a unique chassis number which is issued at the time of manufacture of the vehicle, and

the communication unit identification information is composed of unique identification information which is issued by a predetermined organization at the time of manufacture of the communication unit and information representing a phone number previously allotted to the communication unit.

9. An information providing method according to claim 6 or 7, wherein the user identification information is composed of vehicle registration number information representing a vehicle registration number which is issued by a predetermined organization at the time of sales of the vehicle, and user ID information and user password information which are issued from the fixed station and used for accessing the fixed station.

10. An information providing system in which a movable body and a fixed station communicate with each other and the fixed station provides various types of information to the movable body, the system being characterized in that

the movable body comprises:

means for inputting movable-body identification information for

identifying the movable body, communication unit identification information for identifying a communication unit which is assembled in the movable body and used for communication with the fixed station, and user identification information for identifying a user who owns the movable body, and

sending means for sending to the fixed station the movable-body identification information, the communication unit identification information, and the user identification information entered by the input means; and

the fixed station comprises:

first receiving means for receiving the movable-body identification information, the communication unit identification information, and the user identification information sent from the movable body,

registering means for registering, in a mutually related manner, the movable-body identification information, the communication unit identification information, and the user identification information received by the first receiving means,

storage means for storing the movable-body identification information, the communication unit identification information, and the user identification information registered by the registering means in a mutually related manner,

second receiving means for receiving request information representing request for information provision and at least one of movable-body identification information, communication unit identification information, and user identification information sent from the movable body,

authentication means for authenticating the movable body by comparing at least one of the movable-body identification information, the communication unit identification information, and the user identification

information, received by the second receiving means, with the movable-body identification information, the communication unit identification information, and the user identification information registered in the storage means in a mutually related manner, and

sending means for sending a predetermined piece of information to the movable body on the basis of the request information received by the second receiving means.

11. An information providing system in which a movable body and a fixed station communicate with each other and the fixed station provides various types of information to the movable body, the system being characterized by comprising:

a first information registration apparatus disposed at a predetermined first location and being capable of communicating with the fixed station and a second information registration apparatus disposed at a predetermined second location and being capable of communicating with the fixed station, wherein

the first information registration apparatus comprises:

input means for inputting movable-body identification information issued at the time of manufacture of the movable body and communication unit identification information issued at the time of manufacture of the communication unit assembled in the movable body and used for communication with the fixed station, and

sending means for sending to the fixed station the movable-body identification information and the communication unit identification information input by the input means;

the second information registration apparatus comprises:

input means for inputting user identification information and at least one of the movable-body identification information and the communication unit identification information, and

sending means for sending to the fixed station the user identification information and at least one of the movable-body identification information and the communication unit identification information input by the input means;

the movable body comprises:

input means for inputting request information for requesting the fixed station to provide various types of information, and

sending means for sending, along with the request information input by the input means, at least one of the movable-body identification information, the communication unit identification information, and user identification information; and

the fixed station comprises:

first receiving means for receiving the movable-body identification information and the communication unit identification information sent from the first information registration apparatus and for receiving the user identification information and at least one of the movable-body identification information and the communication unit identification information sent from the second information registration apparatus,

registering means for registering, in a mutually related manner, the movable-body identification information, the communication unit identification information, and the user identification information received by the first receiving means,

storage means for storing the movable-body identification information, the communication unit identification information, and the user identification information registered by the registering means in a mutually related manner,

second receiving means for receiving the request information representing request for information provision and at least one of movable-body identification information, communication unit identification information, and user identification information sent from the movable body,

authentication means for authenticating the movable body by comparing at least one of the movable-body identification information, the communication unit identification information, and the user identification information, received by the second receiving means, with the movable-body identification information, the communication unit identification information, and the user identification information registered in the storage means in a mutually related manner, and

sending means for sending a predetermined piece of information to the movable body on the basis of the request information received by the second receiving means.

12. An information providing system in which a movable body and a fixed station communicate with each other and the fixed station provides various types of information to the movable body, the system being characterized by comprising:

a first information registration apparatus disposed at a predetermined first location and being capable of communicating with the fixed station and a second information registration apparatus disposed at a

predetermined second location and being capable of communicating with the fixed station, wherein

the first information registration apparatus comprises:

input means for inputting movable-body identification information issued at the time of manufacture of the movable body and communication unit identification information issued at the time of manufacture of the communication unit assembled in the movable body and used for communication with the fixed station, and

sending means for sending to the fixed station the movable-body identification information and the communication unit identification information input by the input means;

the second information registration apparatus comprises:

input means for inputting user identification information and at least one of the movable-body identification information and the communication unit identification information, and

sending means for sending to the fixed station the user identification information and at least one of the movable-body identification information and the communication unit identification information input by the input means;

the movable body comprises:

input means for inputting request information for requesting the fixed station to provide various types of information, and

sending means for sending the request information input by the input means, present location information representing a present location of the movable body, and at least one of the movable-body identification information, the communication unit identification information, and user

identification information; and

the fixed station comprises:

first receiving means for receiving the movable-body identification information and the communication unit identification information sent from the first information registration apparatus and for receiving the user identification information and at least one of the movable-body identification information and the communication unit identification information sent from the second information registration apparatus,

registering means for registering, in a mutually related manner, the movable-body identification information, the communication unit identification information, and the user identification information received by the first receiving means,

storage means for storing the movable-body identification information, the communication unit identification information, and the user identification information registered by the registering means in a mutually related manner,

second receiving means for receiving the request information representing request for information provision, the present location information representing the present location of the movable body, and at least one of movable-body identification information, communication unit identification information, and user identification information sent from the movable body,

authentication means for authenticating the movable body by comparing at least one of the movable-body identification information, the communication unit identification information, and the user identification information, received by the second receiving means, with the

movable-body identification information, the communication unit identification information, and the user identification information registered in the storage means in a mutually related manner,

determination means for determining whether or not the movable body is present at the predetermined location on the basis of the movable-body present location information received by the second receiving means, and

sending means for sending a predetermined piece of information to the movable body on the basis of the request information received by the second receiving means.

13. An information providing system according to any one of claims 10 to 12, wherein the communication unit is integrally assembled in the movable body.

14. An information providing system according to any one of claims 10 to 13, wherein at least one the movable-body identification information and the communication unit identification information is represented by a barcode.

15. An information providing system according to any one of claims 10 to 14, wherein the movable body is a vehicle.

16. An information providing system according to claim 15, wherein the predetermined first location is a plant at which the vehicle is manufactured, and the predetermined second location is a sales shop at which the vehicle is sold.

17. An information providing system according to claim 15 or 16, wherein
the movable-body identification information is chassis number
information representing a unique chassis number which is issued at the
time of manufacture of the vehicle, and

the communication unit identification information is composed of
unique identification information which is issued by a predetermined
organization at the time of manufacture of the communication unit and
information representing a phone number previously allotted to the
communication unit.

18. An information providing system according to claim 15 or 16, wherein
the user identification information is composed of vehicle registration
number information representing a vehicle registration number which is
issued by a predetermined organization at the time of sales of the vehicle,
and user ID information and user password information which are issued
from the fixed station and used for accessing the fixed station.

19. A fixed station which provides various types of information to a
movable body, the fixed station comprising:

first receiving means for receiving, from the movable body,
movable-body identification information and communication unit
identification information for specifying the movable body and user
identification information for specifying a user of the movable body;

movable-body-specifying information registering means for
registering, in a mutually related manner, the movable-body identification

information and the communication unit identification information received by the first receiving means;

movable-body-specifying information registration database for accumulating and storing the information pieces registered by the movable-body-specifying information registering means;

user-specifying information registering means for registering the user identification information received by the first receiving means, while relating the user identification information with at least one of the movable-body identification information and the communication unit identification information;

user-specifying information registration database for accumulating and storing the information pieces registered by the user-specifying information registering means;

contents data base for storing contents information to be provided to the user;

second receiving means for receiving request information representing request for the contents information and at least one of movable-body identification information, communication unit identification information, and user identification information sent from the movable body,

authentication means for authenticating the movable body by comparing at least one of the movable-body identification information, the communication unit identification information, and the user identification information, received by the second receiving means, with the movable-body identification information and the communication unit identification information stored in the movable-body-specifying information registration database, and the user identification information registered in

the user-specifying information registration database; and

sending means for sending the contents information stored in the contents database.

20. A fixed station which provides various types of information to a movable body, the fixed station comprising:

first receiving means for receiving, from the movable body, movable-body identification information and communication unit identification information for specifying the movable body and user identification information for specifying a user of the movable body;

movable-body-specifying information registering means for registering, in a mutually related manner, the movable-body identification information and the communication unit identification information received by the first receiving means;

movable-body-specifying information registration database for accumulating and storing the information pieces registered by the movable-body-specifying information registering means;

user-specifying information registering means for registering the user identification information received by the first receiving means, while relating the user identification information with at least one of the movable-body identification information and the communication unit identification information;

user-specifying information registration database for accumulating and storing the information pieces registered by the user-specifying information registering means;

contents data base for storing contents information to be provided to

the user;

second receiving means for receiving request information representing request for the contents information, movable body present location information, and at least one of movable-body identification information, communication unit identification information, and user identification information sent from the movable body,

authentication means for authenticating the movable body by comparing at least one of the movable-body identification information, the communication unit identification information, and the user identification information, received by the second receiving means, with the movable-body identification information and the communication unit identification information stored in the movable-body-specifying information registration database, and the user identification information registered in the user-specifying information registration database;

determination means for determining whether or not the movable body is present at the predetermined location on the basis of the movable-body present location information received by the second receiving means; and

sending means for sending the contents information stored in the contents database.

21. A fixed station according to claim 19 or 20, wherein the communication unit is integrally assembled in the movable body.

22. A fixed station according to any one of claims 19 to 21, wherein at least one the movable-body identification information and the

communication unit identification information is represented by a barcode.

23. A fixed station according to any one of claims 19 to 22, wherein the movable body is a vehicle.

24. A fixed station according to claim 23, wherein

the movable-body identification information is chassis number information representing a unique chassis number which is issued at the time of manufacture of the vehicle, and

the communication unit identification information is composed of unique identification information which is issued by a predetermined organization at the time of manufacture of the communication unit and information representing a phone number previously allotted to the communication unit.

25. A fixed station according to claim 23, wherein the user identification information is composed of vehicle registration number information representing a vehicle registration number which is issued by a predetermined organization at the time of sales of the vehicle, and user ID information and user password information which are issued from the fixed station and used for accessing the fixed station.

26. An information obtaining apparatus for obtaining various types of information from a fixed station, the information obtaining apparatus comprising:

input means for inputting identification information for receiving

authentication at the fixed station and for inputting a request for requesting the fixed station to provide the various types of information;

communication means for sending the information pieces input by the input means and for receiving the various types of information from the fixed station;

storage means for storing the various types of information received by the communication means; and

display means for displaying for the user the various types of information stored in the storage means.

27. An information obtaining apparatus for obtaining various types of information from a fixed station, the information obtaining apparatus comprising:

input means for inputting identification information for receiving authentication at the fixed station and for inputting a request for requesting the fixed station to provide the various types of information;

present location detecting means for detecting a present location;

communication means for sending the information pieces input by the input means and information representing the present location detected by the present location detecting means, and for receiving the various types of information from the fixed station;

storage means for storing the various types of information received by the communication means; and

display means for displaying for the user the various types of information stored in the storage means.